

Title: Next Steps in the Evolution of Human Spaceflight Training

“Train before you fly” has always been a watchword at NASA, and consequently, NASA has been conducting training for human spaceflight missions for longer than it has been involved in the actual conduct of human spaceflight missions. Throughout that time, NASA’s approach to human spaceflight training has continuously evolved to keep pace with the technology of the modern world, but the approach to training itself has not changed significantly. Today, there are more tools and technologies that enable learning than ever before. This paper intends to review the challenges of human spaceflight training and how modern technology and an updated approach could improve that training.

The Spaceflight Training Management Office (DA7) within the Mission Operations Directorate (MOD) has been investigating the current training of instructors, flight controllers and astronauts in order to identify where a new approach to training and training management may be necessary to improve the efficacy of the training provided. Through this investigation, the DA7 team has identified potential areas of improvement within International Space Station (ISS) training in a wide range of areas, including the delivery of training, the structure of the training program, the concept of what is considered training, and the management of that training.

The ISS is an operational program with an established training paradigm. As such, the implementation of these concepts will be met with several challenges that may prevent or preclude them from being adopted. These challenges include demonstrating return-on-investment (ROI) and overcoming cultural or technological obstacles.

This report will delve into the possible improvement areas for training, the future training concepts that are being considered, and the challenges associated with implementation. The paper will include concepts for utilization of Web 2.0 technologies, electronic learning, digital media, and other technologies in the development, management, and conduct of human spaceflight training.